



CENTRAL EUROPEAN UNIVERSITY
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OPEN SOCIETY INSTITUTE

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2004/2005

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Executive summary

Environmental insurance was introduced into Russian environmental policy agenda as early as in 1991. After fifteen years, few environmental policy-makers are aware of the utility of environmental insurance (EI) as a policy tool to improve environmental security, especially at the regional and local levels.

Despite limitations of the national legislation, methodological complications, and controversial socio-economic, political, and economic context, there have been attempts to implement insurance into regional environmental policies in several Russian regions. In the Vologda Region, individual efforts on EI promotion have yet to succeed. Meanwhile, a number of ‘burning’ environmental problems experienced by the region could be addressed through the application of environmental insurance.

The current policy paper targets the Vologda Region Department for Technological and Environmental Supervision of the Federal Environmental, Technological and Nuclear Supervision Service (Rostekhnadzor), one of the key regional environmental policy actors. It provides arguments for EI development, reviews possible approaches to it at the regional level in Russia (policy options), and proposes actions to be carried out by the target institution at the early stage of EI promotion in the Vologda Region (policy recommendations).

The author advises to enhance economic incentives for potential policyholders (economic actors whose operations may result in accidental unintentional environmental damage) under the voluntary EI regime, without developing and adopting specialized regional EI legislation. At the early stage of EI promotion, it is suggested to develop an EI Development Program for the Vologda Region that would meet the needs of all EI stakeholders. The Department for Technological and Environmental Supervision should play an important role in developing methodological and organizational provisions for, as well as informational and training support to, specially devised EI pilot projects to be implemented in the region.

List of abbreviations

EI	environmental insurance
MNR	Ministry of Natural Resources
MPC	maximum permissible concentrations
ELI	environmental liability insurance
MPE	maximum permissible emissions
MPD	maximum permissible discharges
WDL	waste disposal limit
PMR	preventive measures reserve

1. Introduction

At the onset of the transition period in Russia, the idea of introducing insurance into environmental protection and natural resource management domain emerged. As a result, a concept of ‘environmental insurance’ (EI) was formulated, which was included into the list of economic tools of environmental policy-making. Although a great deal of efforts has been invested to put the concept into practice, EI is still perceived as a ‘novel’ issue with doubtful practical outcomes. Many Russian environmental policy-makers are not clear about EI benefits in terms of managing environmental risks and assuring environmental security.

The study of the current national EI system proved the system under development. The context for EI system development is heterogeneous: there are factors encouraging EI development (e.g. aggravation of environmental problems, increase in the amount of financial resources that both insurers and insureds can spend on EI, steady upturn of the national insurance market, and EI developments of in the CIS countries) and those acting as obstacles, including the low level of environmental consciousness of the society, administrative reforms weakening of the national system of environmental management, and stringent taxation policy. A number of deficiencies in the EI legislation were identified. There is a need for strengthening EI formal guidance in terms of approval the relevant guidelines and procedures. Institutional capacity of many EI stakeholders, including local authorities, judicial bodies, and the general public, is not sufficient for adequate performing their functions. As a result, the practice of EI has been limited so far (Demidova, forthcoming). The key strengths, weaknesses, opportunities, and threats of the national EI system are outlined in Annex 1.

At the same time, in several Russian regions decision-makers are interested in environmental insurance. In some of these regions there have been attempts to use insurance for assuring regional environmental security, including the Moscow Region, the Leningrad Region, the Nizhniy Novgorod Region, and the Bashkortostan Republic. Most of these ‘EI pioneers’ were regions covered by the MNR EI experiment of 1994-1996 (MNR, 1994).

One should note that in some of the pilot regions the MNR experiment did not result in any significant outcomes, and the Vologda Region was among them. EI development did not find much support from the regional authorities despite a number of initiatives raised by insurance companies since 1994. However, parliamentary hearings at the Vologda Region Legislative Assembly held on March 3, 2005 generated interest among all regional EI stakeholders. In the course of discussions, the participants concluded that scientific research and EI pilot implementation proved EI to be an effective means to improve regional environmental security, and its consistent promotion under the support of public authorities is of importance. Moreover, the resolution of the hearings highlighted the need for EI promotion in the Vologda Region (VRLA, 2005).

The current policy paper targets the Vologda Region Department for Technological and Environmental Supervision of the Federal Environmental, Technological and Nuclear Supervision Service (Rostekhnadzor). The purpose of the paper is twofold: on the one hand, it seeks to justify the need for EI promotion in the Vologda Region, on the other hand, it proposes recommendations on developing EI in the Vologda Region based on the lessons learnt in other parts of the country, and discusses the role of the target institution in the process¹.

¹ These recommendations were based on the findings of the individual research project “Managing Environmental Risks through Insurance in Russian Federation: Environmental Insurance as a Policy Tool to Strengthen Environmental Security” carried out in 2004-2005. The detailed information about the project, as well as papers (in English) produced during its implementation, are available at www.policy.hu/demidova.

2. What is environmental insurance in Russia today: background

Pursuant to the legislation in force, not only should enterprises and organizations of any form of ownership compensate at their own expense for pollution or any other environmental damage, but they should also prevent such damage (FARF, 1995, 2002). This requirement applies to both ‘approved’ (caused during the operations in compliance with impact standards) and accidental environmental damage related to economic activities. If a harm-doer is not able to cover remediation and third-party compensation costs, these activities are to be financed from the state budget. Of importance is the fact that liquidation of consequences of territorial, regional, and federal-level environmental accidents is the responsibility of the regional government (Government of the Russian Federation, 1996). Therefore, those who pay taxes to the regional budget suffer from these negative impacts and have to bear the burden of their mitigation. Fines for violation of environmental regulations allow for partial recovery of these costs.

In the market economy conditions, the state faces the challenge of developing and enforcing a regulatory mechanism that would provide for financial security of economic actors, whose activities may cause environmental damage, and at the same time create incentives for improving their environmental performance. One of the possible solutions is introduction of *environmental insurance*, defined as *utilization of insurance to protect interests of economic actors against the risk to incur losses resulting from the sudden unintentional damage to the environment* (Kovalenko, 2004).

Environmental insurance is mostly focused on risks related to technogenic emergencies. It should cover cases of sudden unintentional damage to natural objects, including contamination, depletion, and the loss of valuable properties. EI beneficiaries can be legal and natural persons, the State (its environmental protection authorities), and Subjects of Federation and municipalities, both ‘third parties’ and harm-doers.

In Russia EI was viewed as liability insurance for operators (and, in some cases, owners) of industrial facilities posing significant threat to the environment. Liability for third-party damages, resulting from environmental pollution, and environmental pollution damages *per se* should have been insured. The necessity to address the whole range of environmental impairments has been emphasized by a number of researchers (see, e.g. Kovalenko (2004), FC FARF (2004), Stepicheva (2005)).

The Law On Industrial Safety of Hazardous Facilities of 1997 introduced the requirement for compulsory liability insurance against accidental damage to third-parties and the environment (FARF, 1997). In the current practice of liability insurance for hazardous facilities, the assessment of predicted damage which may result from accidents at particular facilities, as well as case-by-case definition of rates and sums insured, is quite rare. Insurers usually apply three minimal sums insured as defined in the Law. As a result, for risks of environmental impairment by operations of hazardous facilities the insurance coverage is *actually* not provided: in case of an accident, only losses of natural and legal persons from property damages are compensated for. Due to the generally small amounts of insurance reserves and liability limits, few (if any) resources are available for financing environmental remediation activities and compensating for environmental impairment losses. Indirect losses by recipients, related to accidental environmental contamination, are not in the focus of the current law.

The idea of expanding the scope of EI has been recently elaborated by several members of the EI policy community (see, e.g. Netsvetayev and Zhilkina (1999), Vasilyeva (2002),

Kovalenko (2004), Bazhaykin (2005)). Proposals have been made to introduce the following insurance mechanisms under EI umbrella:

- Natural objects (e.g. landscapes, habitats, and water bodies) insurance in the form of property insurance,
- Contractual liability insurance of users of natural resources,
- Financial risk insurance (e.g. cost cap insurance) related to environmental remediation costs,
- Personal insurance against risks of technogenic accidents,
- Property insurance for legal entities against losses resulting from accidental environmental damage.

This approach to EI allows for insurance to be applied to a wider range of loss occurrences, and increases the role of EI in managing environmental risks related to economic activities.

3. *Why environmental insurance in the Vologda Region?*

The Vologda Region: key environment and development issues

The Vologda region is an industrialized area: industry contributes 53% of the gross regional product (MDCDEM, 2005). The most important industries - ferrous metallurgy, chemical industry, power industry, pulp and paper industry, woodworking industry, and mechanical engineering – are the key sources of adverse impacts on the environment and human health.

Environmental expenses in the Vologda Region have increased significantly. The key source of environmental investments are equity funds of enterprises – users of natural resources, and regional budget expenditures are less than 1% of the total regional expenses for environmental protection and natural resource preservation. According to the Vologda Region Department for Natural Resources and Environmental Protection, in 2003 regional enterprises spent for this purpose 60% more than in 2002 (Vologda Region, 2004). Only Severstal JSC spent more than 460 mln. rubles as direct investments for improving environmental performance, which is twice in the amount of its 2002 expenditures (Severstal, 2004). The total environmental expenses of 2003 were 1,265.7 mln. rubles, with prevented environmental damage losses in the amount of up to 2,940.7 mln. rubles (DNREP, 2004c).

Most of environmental investments channeled into the upgrade of production facilities and installation and/or increase of the capacity of emission and discharge treatment units to decrease the pollutant loads for the environment. As a result, one can trace a decrease in the total amounts of emissions from point sources and contaminated effluent discharges since 2000 (see Annex 2).

However, there is no relief from problems with the air and surface water quality and waste management, as well as adverse health effects linked to environmental media contamination, which are the key environmental issues on the regional environmental policy agenda (DNREP, 2004b). Only 78% of all the emitted pollutants are captured treated (cleaned-up), of which PM (the least toxic fraction) comprise 93% and gaseous substances 54%. Contaminated discharge rate is 38% of the total discharges, and 40% of drinking water samples analyzed did not comply with sanitary and hygiene standards for the chemical composition (MNR, 2004). According to the Vologda Regional Center for Sanitary and Hygiene Supervision, for populations of large industrial centers (especially for cities of Cherepovets and Sokol) empirical epidemiological data was collected to prove the linkage

between the incidence of specific diseases and mortality² and the amount of technogenic load for the area in the vicinity of production sites of large enterprises (see DNREP (2004a) for details). The sanitary and epidemiological situation in the affected areas is unfavorable.

One should note that damage to the environment and particular recipients, caused by accidental emissions, discharges and other technogenic emergencies, is much higher than those from routine industrial operations. There are 34 chemical hazardous facilities located in the Vologda Region. Accidents at these facilities would lead to significant environmental damages. In 2004, 13 emergencies occurred in Vologda region, and all of them were of technogenic origin (MEM, 2005). In 2003, there were three industrial accidents with significant environmental consequences. Enterprises - sources of accidental pollution were fined by the regional environmental authorities, but total losses related to these events were neither estimated nor compensated for.

Improving the system of state supervision of environmental performance of enterprises and organizations – natural resource users is viewed as a burning issue of the regional public environmental policy and politics. In 2003, 974 cases of environmental law violations were discovered. Competent authorities issued 730 orders prescribing conditions and timing for mitigation activities, only 340 of which were implemented. 178 enterprises-violators were fined for the total amount of 730,000 rubles, and only 400,000 rubles were claimed (DNREP, 2004d).

Key issues to address

The following issues require immediate actions of the environmental agencies operating in the Vologda Region:

- 1) Further increase of environmental investments – expenses for abatement of negative environmental impacts of economic activities,
- 2) Accumulating funds for mitigation of environmental effects of technogenic accidents and other cases of unexpected unintentional damage to the environment, and
- 3) Improving supervision over enterprises and organizations whose operations pose significant environmental threats.

Integration of environmental insurance into regional environmental protection policies and management could help address all these issues.

How could environmental insurance help?

One can single out the following key functions of environmental insurance as an environmental policy-making tool: *damage prevention, performance regulation, damage compensation, victim protection, and economic development promotion* (see Box 1). Environmental liability insurance for operators of hazardous facilities against the risk of accidental environmental damage could address all these key EI functions. In case of an accident with environmental effects, funds from insurance reserves are to be spent for compensation losses, incurred by the affected parties, and recovery of environmental remediation costs to protect the human rights, including the right for favorable environment

² In Cherepovets, the incidence of respiratory diseases is higher than average for the region, which is linked to high concentrations of sulfur dioxide, nitrogen oxide, dust, naphthalene, and hydrogen sulphide in the ambient air of the Severstal JSC vicinity. Exceedance of MPCs for vanadium, cadmium, chloroform, and lead in drinking water correlates with high concentrations of these pollutants in the partially treated effluents of the pulp and paper mill and high incidence of cancer and malformations among Sokol's population (DNREP, 2004a).

and social justice. Preventive measures reserves may be returned to the insured for investments into environmental risk reduction activities. The insurer interested in decreasing the probability of loss occurrence becomes an ally of the competent environmental authorities in their efforts to improve environmental safety of the facilities and create economic motivation to invest into improving environmental performance (Motkin, 2005).

Box 1. Key functions of environmental insurance as an environmental policy tool:

1. **Damage prevention** – environmental preventive measures reserves created by the insurer are a source of funding environmental risk reduction activities related to operation of facilities.
2. **Regulation of harm-doer's behavior** – varying policy conditions (e.g. the amount insured, insurance rate, and duration of the agreement): the insurer is able to manage the behavior of potential policyholders and create economic incentives for additional expenses for protective and/or preventive measures.
3. **Damage compensation** – resources accumulated in insurance reserves ensure that the harm-doer will be able to compensate for losses of affected parties and finance all the necessary actions to mitigate adverse consequences of the insured event.
4. **Economic development promotion** – stimulating insurance industry as an important segment of the post-industrial economy generating investments into other sectors.
5. **Victim protection** – additional guarantees for protecting human rights, particularly the right for favorable environment and full damage compensation, are created to secure society interests.

At the same time, property insurance of natural objects, although ineffective as a prevention tool, enables to accumulate resources needed for full coverage of remediation costs. In the absence of insurance protection, remediation and other activities aimed at mitigating negative environmental effects may be carried out just partially. Insurance for objects under state ownership and state governance, especially of protected areas, may be of particular interest. In turn, contractual liability insurance would allow for compensation of losses incurred by the State as a result of violations of environmental regulations, operational permits, and natural resource licenses. Insurance reserves funds, collected when the insurer applies any of the above-mentioned insurance mechanism, would be an additional source of investments into other sectors of the regional economy.

Thus, putting EI into practice may be an important aid in tackling environmental problems the Vologda Region is currently facing. As parliamentary hearings on environmental insurance demonstrated, the idea of developing insurance for managing environmental risks was welcomed by all stakeholders, including operators of environmentally hazardous facilities. Representatives of regions, experienced in EI development, offered to transfer their knowledge to, and share the lessons they learnt from EI promotion activities with, their Vologda Region counterparts. Moreover, members of the Taskforce on elaboration of the Law On Environmental Insurance under the Federation Council Committee for Science, Culture, Education, Health and Environment expressed readiness to contribute to EI promotion in the Vologda Region.

The next section outlines possible approaches to EI development at the regional level in Russia (policy options), which were defined in the course of review of other regions' experience in EI promotion, and analyses their applicability in the context of the current state of the national EI system.

4. Possible approaches to developing environmental insurance at the regional level in Russia: policy options

Insurance is a market mechanism regulating relationships between the insurer and the insured. In order to promote EI regulators engaged in developing and implementing public environmental policy are to create conditions that would stimulate both key EI actors to interact with regard to environmental risks.

The State can govern the behavior of economic actors through direct regulations following the top-down approach or through creation of economic incentives to make them interested in EI. Today, insurers demonstrate interest, sometimes caution, towards environmental risk handling. At the same time, most of the potential EI policyholders are not enthusiastic about protecting their interests against environment-related business risks. Therefore, EI promotion efforts of the interested public authorities should concentrate on motivation of potential insured to contract environmental insurance.

Based on the review of the experience in EI development in a number of Russian regions, the following possible approaches to integrating environmental insurance into regional environmental policy domain were identified:

- 1) *Introduction of the compulsory environmental liability insurance regime* for environmentally hazardous facilities of the region, with the adoption of a specific regional Law On Environmental Insurance and a number of regulations concerned with all components of the EI process, from pre-insurance surveys and hazard assessments to payments of compensations to affected parties and conducting environmental damage prevention activities.
- 2) *Introduction of 'voluntary-compulsory' environmental liability insurance* (regulatory pressure on potential policyholders) through tightening the procedure for licensing of environmentally hazardous economic activities and issuing operational permits for environmentally hazardous facilities. It is often suggested to make getting the permit/license conditional to providing adequate guarantee for ability to compensate for third-party damages and environmental impairment. For some types of economic activities this requirement has already been introduced in the current legislation, and it is necessary to improve the control over its enforcement. Massive awareness raising of EI as a means to ensure financial security among licensees should accompany these regulatory developments.
- 3) *Development of economic leverage under the voluntary environmental insurance regime* (increased economic pressure on potential policyholders in combination with regulatory pressure) includes strengthening the state system for environmental supervision at the regional, and particularly at the local level to detect as many cases of violations of environmental law, natural resource use licenses, and operational permits as possible. This should be combined with i) enhancing the methodology for environmental damage estimation and economic valuation, and ii) targeted actions to stimulate affected parties to claim for their losses. These measures are to develop the court practice for environmental and related third-party damage indemnification. As a result, the economic pressure on harm-doers would increase considerably to bring them to the insurer seeking insurance protection from extra costs.
- 4) *Introduction of the 'most-favored status' for natural resource users voluntarily contracting any kind of EI* (creating economic incentives to potential policyholders without additional regulatory pressure). Possible methods of

economic motivation include: i) regional tax allowances for EI policyholders, ii) integration of environmental insurance payments into production cost-related expenditures in the process of income tax calculation, iii) reducing the environmental pollution payments for natural resource users contracted environmental impairment liability insurance, and iv) financing environmental insurance payments of state-owned environmentally hazardous enterprises from the regional budget.

An alternative to these four options is a '*no-action*' approach when the state EI actors leave developing voluntary EI and attraction of potential policyholders at insurers' own discretion, and assume that EI as a financial mechanism for resource transfer will develop gradually following the regional economy growth. Since there is an obvious commitment for action among the regional EI stakeholders, this option will not be considered further in this paper.

Today, most of EI experts agree that elaboration of EI legislation, particularly with regard to compulsory ELI, is the responsibility of the federal public authorities. Consequently, environmental insurance cannot be regulated by a special regional law (Bazhaykin, 2005). Moreover, this is an official position of the regional branches of the Ministry of Justice of the Russian Federation and regional Public Prosecutor's Offices. These authorities appealed against a number of regional laws on environmental insurance developed and adopted in the 1990-s (e.g. the Law On Environmental Insurance in the Nizhniy Novgorod Region) and opposed the adoption of new laws in this field (e.g. the Chuvash Republic Law On Environmental Insurance) (Kichigin, 2002; Bazhaykin, 2005; Motkin, 2005). Therefore, attempts to introduce compulsory EI (in the form of ELI) in the Vologda Region, in the absence of a federal law on environmental insurance with provision on compulsory EI, would be a waste of time and resources. Alternatively, one could advise to invest efforts into promoting the elaboration and adoption of the necessary federal law through raising legislative initiatives at the Federal Assembly of the Russian Federation.

The order of licensing environmentally hazardous economic activities, including the list of documentation needed for obtaining a license/permit, is defined by normative acts of the federal level (the Federal Law On Licensing of Several Types of Economic Activities and RF Governmental Decrees) (RAFF, 2001). The existing lists of documents required for obtaining licenses for the use of water resources, subsoil, and forest assets, as well as for defining and approving maximum permissible emissions (MPEs), maximum permissible discharges (MPDs), and waste disposal limits (WDLs), do not guarantee environmental and third-party damage compensation, including liability insurance policy. Regional licensing agencies (regional branches of the Federal Environmental, Technological and Nuclear Supervision Service (Rostekhnadzor) and the Federal Environmental Management Supervision Service (Rosprirodnadzor) of the MNR) do not have the authority to introduce additional region-specific requirements. Meanwhile, as demonstrated by the experience of Saint-Petersburg and the Leningrad Region, strengthening control over the enforcement of the legal requirement to provide financial guarantees for environmental and third-party damage compensation as a condition for approval of several types of economic activities would lead to certain positive effect on ELI development (Fedorov, 2005). At the same time, one should stress that strict regulatory approach to licensees' activities is fraught with the threat of corruption and selective application of legal norms.

There is a common agreement that top-down direct regulation in the field of environmental protection and natural resource management is ineffective in the absence of adequate social and economic preconditions. This rule of thumb is applicable to such a market-based tool as EI. Therefore, EI development activities should emphasize creation of internal motivation for

the potential insured to apply to the insurer for protecting their valuable interests. Unfortunately, several promising taxation incentives for the insurers and the insured, e.g. inclusion of preventive measures reserves (PMRs) into insurance reserves and integration of environmental insurance payments into production cost-related expenditures in the process of income tax calculation, are nowadays treated as illegal (MoF, 2001, 2002). This requires adoption of new schemes for economic stimulation of key EI stakeholders. Every scheme should be subject to the careful cost-benefit analysis.

Taking into account the current delimitation of powers between the federal and regional executive authorities, and other aspects of political and institutional context for EI promotion, the most suitable approach would be based on developing economic leverage under the voluntary EI regime (Approach 3). It does not contradict the federal legislation on environmental risk insurance, match regional environmental policy priorities in terms of strengthening environmental supervision, and is able to improve institutional capacity of all regional EI stakeholders, particularly insurers, insured, competent public authorities responsible for ensuring environmental security, and the general public. Moreover, it does not incur significant extra expenditures from the regional budget. The following section is devoted to possible actions to be undertaken by the Vologda Region Department for Technological and Environmental Supervision of Rostekhnadzor at the early stages of EI promotion in the Vologda Region, in line with the selected policy option.

5. Development of environmental insurance in the Vologda Region: the first steps (policy recommendations)

The regional EI system has not been established in the Vologda Region so far. Activities related to its development should address four operational elements of the EI system: *legislation, methodology, institutional system, and practice* (see Annex 3).

Taking into account recent trends in the development of the EI concept and approaches to its introduction in Russia, elaboration of the road map for integrating insurance into public environmental policy domain in the Vologda Region, which would meet needs of all EI stakeholders, should be a starting point of EI promotion efforts. This road map could be presented in the **Program for Environmental Insurance Development in the Vologda Region**, which would define:

- The goals and objectives of EI promotion in the region (in the short-term, medium-term, and long-term perspective),
- General areas for applying insurance to tackling environmental problems,
- Resources needed to achieve the objectives set,
- Stakeholders to be involved into the implementation of the Program,
- An Action Plan to prepare organizational, regulatory, methodological, informational and resource provisions for EI development in the region,
- An Action Plan for Program implementation.

Preparation works for the Program development should include a detailed baseline analysis (study of the current state of EI system determinants (see Annex 3)) to identify the key areas of improvement, as well as a regional needs analysis. These studies should represent separate tasks at the stage of development of the **Concept for Environmental Insurance Development in the Vologda Region**.

The Vologda Region Department for Natural Resources and Environmental Protection (under the Governor) should carry out the Program development and raise funds for this purpose from the regional budget. As mentioned above, participation of all regional EI stakeholders, including insurers and potential insureds, is an important factor to ensure effectiveness of the Program.

The following phases of EI development in the Vologda Region may be proposed by the Program:

- 1) Development of organizational, regulatory, methodological, informational and resource provisions for pilot EI implementation in the region,
- 2) Implementation of a number of municipal pilot projects,
- 3) Analysis of lessons learnt from the EI municipal pilots and preparation of suggestions on upscaling EI to the regional level,
- 4) Wide EI implementation in the Vologda Region.

The Program should be approved by a special Decree of the Vologda Region Government regulating the order of its implementation.

It is the Program for Development of Environmental Insurance in the Region that should formally define responsibilities of the Vologda Region Department for Technological and Environmental Supervision of Rostekhnadzor as one of the key regional EI policy actors in the EI promotion.

This agency can carry out the following activities at the early stages of EI promotion in the Vologda Region:

- I. Develop a proposal to the Federal Environmental, Technological and Nuclear Supervision Service (Rostekhnadzor) on amendments to a number of federal regulations to introduce financial guarantees for compensating environmental and third-party damage resulted from technogenic emergencies as a condition for obtaining natural resource use licenses and operational permits.
- II. Jointly with *insurance companies* and *sanitary and epidemiological supervision authorities*, review and summarize Vologda Region experience on assessment of environmental risks and estimation of accidental environmental damages. Special attention has to be paid to health risk assessments and environmental epidemiological studies by the Vologda Region Center for Sanitary and Epidemiological Supervision, and to the officially approved methodological framework for these investigations.
- III. Undertake a research on existing procedures (both approved and unofficial guidance) for the assessment of risks and damages to public health and the environment with the focus on methodological support for environmental insurance in regions advanced in EI implementation, including the Moscow Region, the Leningrad Region, the Nizhniy Novgorod Region, and the Bashkortostan Republic.
- IV. Based on the review of the available EI techniques and procedures, prepare comprehensive guidance on environmental liability insurance and recommend its application in the region with the pertinent information letter. In the voluntary EI framework it is not necessary to approve these documents at the federal level. It would be sufficient if insurers and insureds will use the case procedures to assess the predicted and actual damages.

- V. Jointly with the Vologda Region branch of the Federal Environmental Management Supervision Service (Rosprirodnadzor) and the Vologda Region Main Department for Civil Defense and Emergency Management, compile a list of environmentally hazardous facilities located in the region, which could be subject to ELI (environmental impairment and related third-party damage insurance).
- VI. Jointly with the Vologda Region branch of the Federal Environmental Management Supervision Service (Rosprirodnadzor), the Vologda Region Main Department for Civil Defense and Emergency Management, and insurance companies, create informational database on sources of environmental threats and cases of unexpected unintentional environmental damage related to permitted economic activities.
- VII. Raise the awareness of operators of environmentally hazardous facilities about benefits of applying insurance to managing environment-related risks. It is suggested to include this topic (insurance for environmental protection and management) into the curricula of workshops for natural resource users, organized by the Vologda Region Department for Technological and Environmental Supervision of Rostehnadzor.
- VIII. Disseminate information about the possibility of claiming for damage incurred by physical and legal persons affected by accidental environmental deterioration. Information should include adapted instructions on the step-by-step procedure for advancing claims, collecting evidence to support the claim, and ensuring its credibility in court.
- IX. Develop an internal guidance document on the procedure for advancing claims on environmental damages for the Vologda Region Department for Technological and Environmental Supervision of the Rostehnadzor staff.
- X. Jointly with the local environmental supervision services, elaborate suggestions on improving the system of detecting environmental impairment related to permitted economic activities (e.g. improving the system of hot lines accepting alerts).
- XI. Develop and implement pilot projects on assessment and allocation of environmental risks related to operations of environmentally hazardous facilities. The Vologda Region Department for Technological and Environmental Supervision of Rostehnadzor is advised to act as a mediator between insurers and potential insureds.
- XII. Jointly with the Environmental Committee of the Vologda Region Legislative Assembly, the Vologda Region Department for Natural Resources and Environmental Protection, and the Vologda Region branch of the Federal Environmental Management Supervision Service (Rosprirodnadzor), consider the possibility of introducing the Concept for Development of Environmental Insurance in the Vologda Region. The Concept would define the framework for EI promotion in the region. If this proposal is approved, the Vologda Region Department for Technological and Environmental Supervision of Rostehnadzor is suggested to take part in the multi-stakeholder taskforce for developing the Concept. The taskforce should include representatives of the Vologda Region Legal Assembly, regional Government, competent public authorities engaged in assuring environmental security at the regional level, local governments, insurers, and potential insureds (enterprises and

organizations – natural resource users). Members of the taskforce are to co-operate with the Taskforce on elaboration of the Law On Environmental Insurance under the Federation Council Committee for Science, Culture, Education, Health and Environment.

EI opponents frequently refer to the lack of sufficient social and economic prerequisites for the wide application of EI. However, these prerequisites, or incentives, can and should be created, and this is the key contribution of the interested authorities in the development of this policy tool. Moreover, environmental insurance, as well as EI promotion activities, is one of possible points for interaction among the public, private and civil society to achieve sustainability at the regional level.

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Annex 1. Strengths, weaknesses, opportunities and threats of the Russian environmental insurance system (Demidova, forthcoming)

Strengths	Weaknesses
<ul style="list-style-type: none"> • Mandatory environmental impairment insurance is required for certain economic activities in the framework of civil liability insurance, • Legislation for voluntary environmental insurance is sufficient, • Modern methods to estimate parameters for environmental risk allocation are developed, • High aggregated institutional capacity of the insurers in the EI field, • Established EI policy community with intensive networking among its members, • There is an experience with EI practical application in the framework of regional pilot projects 	<ul style="list-style-type: none"> • Controversial definitions of EI in of the existing legislation, • Not all environmental risks are covered by provisions for mandatory EI, • Procedures to estimate predicted and actual environmental damage covered by insurance policies are not clearly defined, • Lack of integrated, formally approved, methodology to assess environmental risks and economic damages, • Weakened national environmental management system, which lacks resources and technical expertise in the field of EI, • Lack of co-operation among state agencies interested in EI (MNR, MEM, MoH, and Rostehnadzor), • Low aggregated institutional capacity of the potential insureds in the EI field, • Lack of special EI knowledge among most of EI stakeholders, • Low number of claims ion environmental damage from affected parties compared to the number of damage cases, • Low amounts of insurance reserves and environmental protection measured reserves
Opportunities	Threats
<ul style="list-style-type: none"> • High deterioration of the basic production assets, high number or industrial accidents • Poor environmental conditions, • Economic upturn in all sectors, increase in environmental investments, • Dramatic increase in the national insurance market, • Expanding scope of the EI notion • Possible joining WTO by Russia, • Trend towards harmonization of the EU and the Russian legislation, • Development of EI legislation at the CIS level (model laws), • Introduction of mandatory EI in CIS countries (e.g. Azerbaijan) 	<ul style="list-style-type: none"> • Relatively low priority of environmental protection issues for the Russian society, • Focus on economic objectives among decision-makers, • Lobby against, and open opposition to, EI among decision-makers, • Negative EI image among potential insureds (EI perceived as an 'exaction' laid on manufacturers), • Tax policy that does not provide enough incentives for insurers and insureds to deal with the new insurance branch, • Traditionally narrow EI definition (a type of liability insurance) among EI practitioners, • Trend towards captive EI practice, • Increasing inflation rates, • Continuous administrative reform, • Restricting possibilities to implement regional initiatives due to the strengthening power hierarchy, • Underdeveloped national re-insurance market • Distribution of powers among regional and federal authorities in the EI field are not clearly defined

Note: EI – environmental insurance

	EI system context-related factors
	EI legislation-related factors
	EI methodology-related factors

	EI institutional system-related factors
	EI practice-related factors

Annex 2. Specific indicators of technogenic pressure on the environment for the Vologda Region (DNREP, 2004b)

	Area	Population	Emissions of pollutants from point sources	Discharges into surface water bodies	Hazardous waste production	Specific indicators					
						Emissions of pollutants from point sources	Discharges into surface water bodies B			Hazardous waste production	
	thous. m ²	thous.	thous. tones	mln. m ³	thous. tones	t/m ²	kg per capita	thous. m ³ / m ²	m ³ per capita	t/m ²	kg per capita
2003	145.3	1261,2	449,563	214,3	16500,0	3,094	52,2	1,47	169,9	113,5	13082,7
2002	145, 3	1270,0	474,295	230,97	15282.0	3,264	84,02	1,59	181,9	105,2	12033,1
2001	145, 7	1301,3	475,6	258,3	6574,7	3,264	57,9	1,8	197,8	45,13	5013,8
2000	145, 7	1311,3	--	261,1	--	--	61,9	1,8	195,1	--	--

Annex 3. The system of environmental insurance and its determinants **(Demidova, forthcoming)**

The *system of environmental insurance* is generally viewed as a legal and regulatory framework dealing with application of insurance for environmental protection and management purposes, and those addressing environmental liability issues. In the current paper, four more *determinants* of EI system (i.e. factors which determine the development of the system) are introduced. Four out of five EI system determinants considered are the operational elements of the system while the fifth one (Context) encompasses external forces influencing the system. This set of EI determinants was developed based on the analysis of international experience in applying insurance for environmental safety, as well as on findings of interviews and consultations with international and Russian environmental risk assessment and insurance experts.

Determinants of an EI system

- 1) **Context:** conditions for the development of environmental insurance system in Russia. Three components of the context were singled out:
 - Environmental and economic,
 - Social and environmental,
 - Political and institutional
- 2) **Legal and regulatory framework** dealing with environmental liability and environmental insurance issues;
- 3) **Methodology** for the process of environmental risk insurance (assessment of environmental risks and damages and calculation of insurance premiums and rates);
- 4) **Institutional system:** a system of EI stakeholders and their relationships on environmental insurance. The following elements of stakeholder capacity were defined:
 - Awareness of environmental insurance, its benefits and limitations, among the stakeholders,
 - Level of stakeholder interest in EI development,
 - Involvement in developing state policy for introduction of insurance in environmental protection and management,
 - Professional resources/specific expertise enabling performance of EI functions,
 - Availability of financial and other resources necessary to perform EI functions.
- 5) **Practice** of environmental insurance: how EI stakeholders with their capacity use provisions of the current legislation and methodology for environmental insurance.